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PATENT COOPERATION TREATY

PCT

PCT Application  
PCT/JP2002/013577

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 663588	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP02/13577	International filing date (day/month/year) 26 December 2002 (26.12.02)	Priority date (day/month/year) 27 December 2001 (27.12.01)
International Patent Classification (IPC) or national classification and IPC C08J 5/18, 7/00, B29C 61/02 // C08L 101:00, 67:00, 25:04, B29K 67:00, B29K 25:00, B29L7 :00		
Applicant TOYO BOSEKI KABUSHIKI KAISHA		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input checked="" type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 17 July 2003 (17.07.03)	Date of completion of this report 05 November 2003 (05.11.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1-11	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

## 2. Citations and explanations

- Document 1: JP 2001-96616 A (Mitsubishi Plastics, Inc.),  
10 April 2001
- Document 2: JP 2001-58377 A (Mitsubishi Plastics, Inc.),  
06 March 2001
- Document 3: JP 2001-295051 A (Wolff Walsrode AG.), 26  
October 2001
- Document 4: WO 94/04601 A1 (C. R. BARD, Inc.), 03 March  
1994
- Document 5: JP 60-240434 A (Toray Industries, Inc.), 29  
November 1985
- Document 6: EP 127149 A2 (Idemitsu Petrochemical Co.,  
Ltd.), 05 December 1984
- Document 7: JP 4-8736 A (Okura Industrial Co., Ltd.), 13  
January 1992

Claims 1 and 3 do not involve an inventive step in the light of documents 1 and 2, and documents 3-7 cited in the international search report.

Document 1 discloses a heat-shrinkable polyester resin film, and document 2 discloses a heat-shrinkable polystyrene resin film. In the light of the disclosures of these documents, these films are thought to fulfill the condition of exhibiting a thermal contraction rate of 20% or more over a period of ten seconds at a temperature of

85°C. In addition, both documents disclose a feature wherein it is possible to implement surface treatments such as a corona discharge treatment in order to improve print characteristics.

Likewise, documents 3-6 disclose a treatment method for improving the print adhesion characteristics of the surface of the resin film, wherein a plasma treatment is conducted in the presence of a nitrogen gas. Specifically, document 3 discloses a feature wherein the distribution quantity of nitrogen atoms in the film surface is 2.7 atom%, document 4 discloses features wherein the content of nitrogen atoms in the film surface is 0.9% and blocking does not occur, and document 5 discloses a feature wherein the adhesion property-improving effect has temporal stability. In addition, document 3 and document 7 disclose a feature wherein as a result of the surface treatment for improving the print characteristics, the wet tension of the film surface is set to 36mN/m or more.

Therefore, it would be easy for a person skilled in the art to obtain a film corresponding to the invention set forth in claim 1 of this application by applying the feature of conducting a plasma treatment in the presence of nitrogen, which is well known as disclosed in documents 3-6, to the heat-shrinkable films disclosed in documents 1 and 2 in order to improve print adhesion characteristics and the like.

Claims 2 and 4-7 do not involve an inventive step in the light of documents 1-7 cited in the international search report. For example, the plasma treatment that is conducted upon the film surface can be conducted continuously as disclosed in document 6, therefore it would be easy for a person skilled in the art to conceive of conducting appropriate quality control in order to produce rolls of long film.

Claims 8-11 do not involve an inventive step in the

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light of documents 1-7 cited in the international search report. There is no particular difference between the surface treatment method laid open in the description of this application and the surface treatment methods disclosed in documents 3-6, therefore there is not thought to be any special differences between the characteristics that are exhibited by the films after treatment.

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

(1) Claims 9 and 10 set forth a "roll of film," however claims 9 and 10 cite the "film" set forth in claim 1; therefore, the configuration of the invention set forth in these claims is unclear.

(2) The description only sets forth an example involving polyester, therefore the description cannot be said to disclose sufficient support as to whether it is possible to actually produce a heat-shrinkable film that fulfills the desired characteristics using the polystyrene set forth in claim 3 or the other resins that constitute the invention set forth in claim 1.